

Internet retrieval tools go on market

Gopher and WAIS to go commercial this month; other information retrieval products gaining ground.

By Ellen Messmer
Senior Correspondent

WASHINGTON, D.C. — Three types of search-and-retrieval software tools currently available free on the Internet are being readied as commercial products.

In just over a year, Thinking Machines Corp.'s Wide Area Information Server (WAIS) and the University of Minnesota's Gopher software have been loaded onto servers at nearly 1,000 sites on the Internet, giving users the means to locate and retrieve information through text-based queries.

But even as the developers of WAIS and Gopher mull over plans to set up commercial ventures this month, a number of other products based on a third information retrieval method are gaining ground.

The library community is rallying around the 1992 ANSI standard Z39.50, an application-layer protocol for computer-to-computer information retrieval. The University of California, Pennsylvania State University and other colleges have set up a Z39.50 test bed on the Internet with AT&T, Notis, Inc., Digital Equipment Corp., Data Research Associates, Inc. and other vendors to develop interoperable products.

The first wave of Z39.50 products, including one from the On-Line Computer Library Center, Inc., hit the market just last month.

"Z39.50, like many such standards, is defined in the Open Sys-

tems Interconnection model," said Clifford Lynch, director of library automation in the office of the president at the University of California. But because Transmission Control Protocol/Internet Protocol is used far more than OSI on the Internet, Z39.50 was adapted to run over TCP/IP for the Internet prototype, he said.

While specific search and indexing features of Gopher, WAIS and Z39.50 differ, all three technologies present users with a way to send out a query on a subject in order to find and retrieve information across a network. However, WAIS can be reached through Gopher, but Gopher cannot be reached through WAIS.

WAIS

WAIS, in fact, uses the 1988 version of Z39.50 as its starting point, but is not compatible with the 1992 version of that standard. WAIS allows users on different computer platforms to find and access all types of information, including text, image or stored digital voice.

The client program can run on an end-user device or on a shared machine used as an access device, as is often the case on the Internet. The server does the indexing and retrieval of documents. All files or databases to be queried have to be indexed.

WAIS, Gopher and 1992 Z39.50 all eliminate the need to know the wide variety of commands to obtain files since the resource discovery tools can intuitively find them.
(continued on page 77)

Retrieval tools go on market

continued from page 29

itively start a File Transfer Protocol session, or other access means, on the user's command to retrieve the data.

Thinking Machines, which developed WAIS, offers a version that runs on its powerful parallel computer, the Connection Machine. But the company's decision to release WAIS as a public-domain "freeware" package has spawned versions of WAIS client software for about a dozen of the most widely used computer platforms.

Although use of WAIS has increased during its use on the Internet, it was always intended to be an integrated search system for corporate users, said Brewster Kahle, project leader on WAIS at Thinking Machines. Now its creators appear ready to make WAIS commercially available for a variety of platforms.

Kahle said he will launch a company called WAIS, Inc. in

Menlo Park, Calif., later this month in order to market commercial versions of WAIS. Although he declined to offer more details, he said the continued availability of freeware versions would help publicize WAIS and give users a chance to experiment with it. But he pointed out that companies want commercially available products with customer support.

Gopher

The University of Minnesota, which holds the copyright to Gopher, allows free use of its client/server software as long as the information on the server is made available free of charge on the Internet.



Mark McCahill

Public-domain versions of Gopher have been created for virtually every computer platform, ranging from personal computers to mainframes.

"Gopher is designed to be easy to write clients and servers for," said Mark McCahill, manager of distributed computing and the project leader on Gopher.

Once files and databases are

prepared with Gopher's inverted text-search software so that key words can be located, documents can be accessed from Gopher servers. Michigan State University started with a Sun Microsystems, Inc. computer as the Gopher server, and this week the university is adding an IBM RISC System/6000 Model 350.

Rick Wiggins, manager of the computer laboratory, said students and faculty use Gopher to search for anything from scientific data to library information and course schedules.

Internet use of Gopher has skyrocketed, according to Joel Cooper, assistant director of network services at University of Notre Dame, pointing to statistics from the National Science Foundation (NSF) that said there has been a 4,000-fold increase in Gopher traffic since last year.

And Gopher, too, is going commercial. According to McCahill, the university this month is releasing Gopher Plus, the next version. Added features will include a billing mechanism to

charge for database use, support for binary text file transfer and a security method based on private-key encryption.

The issue of gateways between WAIS, Gopher and Z39.50 is a significant one to users. Last fall, the NSF funded a newly formed organization called the Clearinghouse for Networked Information and Retrieval to track development of the technologies.



Brewster Kahle

As part of its work, the clearinghouse, based in Research Triangle Park, N.C., this month will release a public-domain version of Z39.50, which will be backward compatible with WAIS.

"It's not a one-solution world," said Jim Fulton, computer programmer with the clearinghouse. "The important point is to make sure they are interoperable."

In addition to WAIS, Gopher and Z39.50, the clearinghouse will also follow the development of other emerging Internet-fostered search methods, including Archie and Worldwide Web. □

Internet retrieval tools go on market

Gopher and WAIS to go commercial this month; other information retrieval products gaining ground.

By Ellen Messmer
Senior Correspondent

WASHINGTON, D.C. — Three types of search-and-retrieval software tools currently available free on the Internet are being readied as commercial products.

In just over a year, Thinking Machines Corp.'s Wide Area Information Server (WAIS) and the University of Minnesota's Gopher software have been loaded onto servers at nearly 1,000 sites on the Internet, giving users the means to locate and retrieve information through text-based queries.

But even as the developers of WAIS and Gopher mull over plans to set up commercial ventures this month, a number of other products based on a third information retrieval method are gaining ground.

The library community is rallying around the 1992 ANSI standard Z39.50, an application-layer protocol for computer-to-computer information retrieval. The University of California, Pennsylvania State University and other colleges have set up a Z39.50 test bed on the Internet with AT&T, Notis, Inc., Digital Equipment Corp., Data Research Associates, Inc. and other vendors to develop interoperable products.

The first wave of Z39.50 products, including one from the On-Line Computer Library Center, Inc., hit the market just last month.

"Z39.50, like many such standards, is defined in the Open Sys-

tems Interconnection model," said Clifford Lynch, director of library automation in the office of the president at the University of California. But because Transmission Control Protocol/Internet Protocol is used far more than OSI on the Internet, Z39.50 was adapted to run over TCP/IP for the Internet prototype, he said.

While specific search and indexing features of Gopher, WAIS and Z39.50 differ, all three technologies present users with a way to send out a query on a subject in order to find and retrieve information across a network. However, WAIS can be reached through Gopher, but Gopher cannot be reached through WAIS.

WAIS

WAIS, in fact, uses the 1988 version of Z39.50 as its starting point, but is not compatible with the 1992 version of that standard. WAIS allows users on different computer platforms to find and access all types of information, including text, image or stored digital voice.

The client program can run on an end-user device or on a shared machine used as an access device, as is often the case on the Internet. The server does the indexing and retrieval of documents. All files or databases to be queried have to be indexed.

WAIS, Gopher and 1992 Z39.50 all eliminate the need to know the wide variety of commands to obtain files since the resource discovery tools can intu-

(continued on page 77)

Retrieval tools go on market

continued from page 29

itively start a File Transfer Protocol session, or other access means, on the user's command to retrieve the data.

Thinking Machines, which developed WAIS, offers a version that runs on its powerful parallel computer, the Connection Machine. But the company's decision to release WAIS as a public-domain "freeware" package has spawned versions of WAIS client software for about a dozen of the most widely used computer platforms.

Although use of WAIS has increased during its use on the Internet, it was always intended to be an integrated search system for corporate users, said Brewster Kahle, project leader on WAIS at Thinking Machines. Now its creators appear ready to make WAIS commercially available for a variety of platforms.

Kahle said he will launch a company called WAIS, Inc. in

Menlo Park, Calif., later this month in order to market commercial versions of WAIS. Although he declined to offer more details, he said the continued availability of freeware versions would help publicize WAIS and give users a chance to experiment with it. But he pointed out that companies want commercially available products with customer support.

Gopher

The University of Minnesota, which holds the copyright to Gopher, allows free use of its client/server software as long as the information on the server is made available free of charge on the Internet.



Mark McCahill

Public-domain versions of Gopher have been created for virtually every computer platform, ranging from personal computers to mainframes.

"Gopher is designed to be easy to write clients and servers for," said Mark McCahill, manager of distributed computing and the project leader on Gopher.

Once files and databases are

prepared with Gopher's inverted text-search software so that key words can be located, documents can be accessed from Gopher servers. Michigan State University started with a Sun Microsystems, Inc. computer as the Gopher server, and this week the university is adding an IBM RISC System/6000 Model 350.

Rick Wiggins, manager of the computer laboratory, said students and faculty use Gopher to search for anything from scientific data to library information and course schedules.

Internet use of Gopher has skyrocketed, according to Joel Cooper, assistant director of network services at University of Notre Dame, pointing to statistics from the National Science Foundation (NSF) that said there has been a 4,000-fold increase in Gopher traffic since last year.

And Gopher, too, is going commercial. According to McCahill, the university this month is releasing Gopher Plus, the next version. Added features will include a billing mechanism to

charge for database use, support for binary text file transfer and a security method based on private-key encryption.

The issue of gateways between WAIS, Gopher and Z39.50 is a significant one to users. Last fall, the NSF funded a newly formed organization called the Clearinghouse for Networked Information and Retrieval to track development of the technologies.

As part of its work, the clearinghouse, based in Research Triangle Park, N.C., this month will release a public-domain version of Z39.50, which will be backward compatible with WAIS.

"It's not a one-solution world," said Jim Fulton, computer programmer with the clearinghouse. "The important point is to make sure they are interoperable."

In addition to WAIS, Gopher and Z39.50, the clearinghouse will also follow the development of other emerging Internet-fostered search methods, including Archie and Worldwide Web. **■**



Brewster Kahle

Internet retrieval tools go on market

Gopher and WAIS to go commercial this month; other information retrieval products gaining ground.

By Ellen Messmer
Senior Correspondent

WASHINGTON, D.C. — Three types of search-and-retrieval software tools currently available free on the Internet are being readied as commercial products.

In just over a year, Thinking Machines Corp.'s Wide Area Information Server (WAIS) and the University of Minnesota's Gopher software have been loaded onto servers at nearly 1,000 sites on the Internet, giving users the means to locate and retrieve information through text-based queries.

But even as the developers of WAIS and Gopher mull over plans to set up commercial ventures this month, a number of other products based on a third information retrieval method are gaining ground.

The library community is rallying around the 1992 ANSI standard Z39.50, an application-layer protocol for computer-to-computer information retrieval. The University of California, Pennsylvania State University and other colleges have set up a Z39.50 test bed on the Internet with AT&T, Notis, Inc., Digital Equipment Corp., Data Research Associates, Inc. and other vendors to develop interoperable products.

The first wave of Z39.50 products, including one from the On-Line Computer Library Center, Inc., hit the market just last month.

"Z39.50, like many such standards, is defined in the Open Sys-

tems Interconnection model," said Clifford Lynch, director of library automation in the office of the president at the University of California. But because Transmission Control Protocol/Internet Protocol is used far more than OSI on the Internet, Z39.50 was adapted to run over TCP/IP for the Internet prototype, he said.

While specific search and indexing features of Gopher, WAIS and Z39.50 differ, all three technologies present users with a way to send out a query on a subject in order to find and retrieve information across a network. However, WAIS can be reached through Gopher, but Gopher cannot be reached through WAIS.

WAIS

WAIS, in fact, uses the 1988 version of Z39.50 as its starting point, but is not compatible with the 1992 version of that standard. WAIS allows users on different computer platforms to find and access all types of information, including text, image or stored digital voice.

The client program can run on an end-user device or on a shared machine used as an access device, as is often the case on the Internet. The server does the indexing and retrieval of documents. All files or databases to be queried have to be indexed.

WAIS, Gopher and 1992 Z39.50 all eliminate the need to know the wide variety of commands to obtain files since the resource discovery tools can intu-

(continued on page 77)

Retrieval tools go on market

continued from page 29

itively start a File Transfer Protocol session, or other access means, on the user's command to retrieve the data.

Thinking Machines, which developed WAIS, offers a version that runs on its powerful parallel computer, the Connection Machine. But the company's decision to release WAIS as a public-domain "freeware" package has spawned versions of WAIS client software for about a dozen of the most widely used computer platforms.

Although use of WAIS has increased during its use on the Internet, it was always intended to be an integrated search system for corporate users, said Brewster Kahle, project leader on WAIS at Thinking Machines. Now its creators appear ready to make WAIS commercially available for a variety of platforms.

Kahle said he will launch a company called WAIS, Inc. in

Menlo Park, Calif., later this month in order to market commercial versions of WAIS. Although he declined to offer more details, he said the continued availability of freeware versions would help publicize WAIS and give users a chance to experiment with it. But he pointed out that companies want commercially available products with customer support.

Gopher

The University of Minnesota, which holds the copyright to Gopher, allows free use of its client/server software as long as the information on the server is made available free of charge on the Internet.



Mark McCahill

Public-domain versions of Gopher have been created for virtually every computer platform, ranging from personal computers to mainframes.

"Gopher is designed to be easy to write clients and servers for," said Mark McCahill, manager of distributed computing and the project leader on Gopher.

Once files and databases are

prepared with Gopher's inverted text-search software so that key words can be located, documents can be accessed from Gopher servers. Michigan State University started with a Sun Microsystems, Inc. computer as the Gopher server, and this week the university is adding an IBM RISC System/6000 Model 350.

Rick Wiggins, manager of the computer laboratory, said students and faculty use Gopher to search for anything from scientific data to library information and course schedules.

Internet use of Gopher has skyrocketed, according to Joel Cooper, assistant director of network services at University of Notre Dame, pointing to statistics from the National Science Foundation (NSF) that said there has been a 4,000-fold increase in Gopher traffic since last year.

And Gopher, too, is going commercial. According to McCahill, the university this month is releasing Gopher Plus, the next version. Added features will include a billing mechanism to

charge for database use, support for binary text file transfer and a security method based on private-key encryption.

The issue of gateways between WAIS, Gopher and Z39.50 is a significant one to users. Last fall, the NSF funded a newly formed organization called the Clearinghouse for Networked Information and Retrieval to track development of the technologies.



Brewster Kahle

As part of its work, the clearinghouse, based in Research Triangle Park, N.C., this month will release a public-domain version of Z39.50, which will be backward compatible with WAIS.

"It's not a one-solution world," said Jim Fulton, computer programmer with the clearinghouse. "The important point is to make sure they are interoperable."

In addition to WAIS, Gopher and Z39.50, the clearinghouse will also follow the development of other emerging Internet-fostered search methods, including Archie and Worldwide Web. **■**

Internet retrieval tools go on market

Gopher and WAIS to go commercial this month; other information retrieval products gaining ground.

By Ellen Messmer
Senior Correspondent

WASHINGTON, D.C. — Three types of search-and-retrieval software tools currently available free on the Internet are being readied as commercial products.

In just over a year, Thinking Machines Corp.'s Wide Area Information Server (WAIS) and the University of Minnesota's Gopher software have been loaded onto servers at nearly 1,000 sites on the Internet, giving users the means to locate and retrieve information through text-based queries.

But even as the developers of WAIS and Gopher mull over plans to set up commercial ventures this month, a number of other products based on a third information retrieval method are gaining ground.

The library community is rallying around the 1992 ANSI standard Z39.50, an application-layer protocol for computer-to-computer information retrieval. The University of California, Pennsylvania State University and other colleges have set up a Z39.50 test bed on the Internet with AT&T, Notis, Inc., Digital Equipment Corp., Data Research Associates, Inc. and other vendors to develop interoperable products.

The first wave of Z39.50 products, including one from the On-Line Computer Library Center, Inc., hit the market just last month.

"Z39.50, like many such standards, is defined in the Open Sys-

tems Interconnection model," said Clifford Lynch, director of library automation in the office of the president at the University of California. But because Transmission Control Protocol/Internet Protocol is used far more than OSI on the Internet, Z39.50 was adapted to run over TCP/IP for the Internet prototype, he said.

While specific search and indexing features of Gopher, WAIS and Z39.50 differ, all three technologies present users with a way to send out a query on a subject in order to find and retrieve information across a network. However, WAIS can be reached through Gopher, but Gopher cannot be reached through WAIS.

WAIS

WAIS, in fact, uses the 1988 version of Z39.50 as its starting point, but is not compatible with the 1992 version of that standard. WAIS allows users on different computer platforms to find and access all types of information, including text, image or stored digital voice.

The client program can run on an end-user device or on a shared machine used as an access device, as is often the case on the Internet. The server does the indexing and retrieval of documents. All files or databases to be queried have to be indexed.

WAIS, Gopher and 1992 Z39.50 all eliminate the need to know the wide variety of commands to obtain files since the resource discovery tools can intu-

(continued on page 77)

Retrieval tools go on market

continued from page 29

itively start a File Transfer Protocol session, or other access means, on the user's command to retrieve the data.

Thinking Machines, which developed WAIS, offers a version that runs on its powerful parallel computer, the Connection Machine. But the company's decision to release WAIS as a public-domain "freeware" package has spawned versions of WAIS client software for about a dozen of the most widely used computer platforms.

Although use of WAIS has increased during its use on the Internet, it was always intended to be an integrated search system for corporate users, said Brewster Kahle, project leader on WAIS at Thinking Machines. Now its creators appear ready to make WAIS commercially available for a variety of platforms.

Kahle said he will launch a company called WAIS, Inc. in

Menlo Park, Calif., later this month in order to market commercial versions of WAIS. Although he declined to offer more details, he said the continued availability of freeware versions would help publicize WAIS and give users a chance to experiment with it. But he pointed out that companies want commercially available products with customer support.

Gopher

The University of Minnesota, which holds the copyright to Gopher, allows free use of its client/server software as long as the information on the server is made available free of charge on the Internet.



Mark McCahill

Public-domain versions of Gopher have been created for virtually every computer platform, ranging from personal computers to mainframes.

"Gopher is designed to be easy to write clients and servers for," said Mark McCahill, manager of distributed computing and the project leader on Gopher.

Once files and databases are

prepared with Gopher's inverted text-search software so that key words can be located, documents can be accessed from Gopher servers. Michigan State University started with a Sun Microsystems, Inc. computer as the Gopher server, and this week the university is adding an IBM RISC System/6000 Model 350.

Rick Wiggins, manager of the computer laboratory, said students and faculty use Gopher to search for anything from scientific data to library information and course schedules.

Internet use of Gopher has skyrocketed, according to Joel Cooper, assistant director of network services at University of Notre Dame, pointing to statistics from the National Science Foundation (NSF) that said there has been a 4,000-fold increase in Gopher traffic since last year.

And Gopher, too, is going commercial. According to McCahill, the university this month is releasing Gopher Plus, the next version. Added features will include a billing mechanism to

charge for database use, support for binary text file transfer and a security method based on private-key encryption.

The issue of gateways between WAIS, Gopher and Z39.50 is a significant one to users. Last fall, the NSF funded a newly formed organization called the Clearinghouse for Networked Information and Retrieval to track development of the technologies.

As part of its work, the clearinghouse, based in Research Triangle Park, N.C., this month will release a public-domain version of Z39.50, which will be backward compatible with WAIS.

"It's not a one-solution world," said Jim Fulton, computer programmer with the clearinghouse. "The important point is to make sure they are interoperable."

In addition to WAIS, Gopher and Z39.50, the clearinghouse will also follow the development of other emerging Internet-fostered search methods, including Archie and Worldwide Web. **■**



Brewster Kahle

Internet retrieval tools go on market

Gopher and WAIS to go commercial this month; other information retrieval products gaining ground.

By Ellen Messmer
Senior Correspondent

WASHINGTON, D.C. — Three types of search-and-retrieval software tools currently available free on the Internet are being readied as commercial products.

In just over a year, Thinking Machines Corp.'s Wide Area Information Server (WAIS) and the University of Minnesota's Gopher software have been loaded onto servers at nearly 1,000 sites on the Internet, giving users the means to locate and retrieve information through text-based queries.

But even as the developers of WAIS and Gopher mull over plans to set up commercial ventures this month, a number of other products based on a third information retrieval method are gaining ground.

The library community is rallying around the 1992 ANSI standard Z39.50, an application-layer protocol for computer-to-computer information retrieval. The University of California, Pennsylvania State University and other colleges have set up a Z39.50 test bed on the Internet with AT&T, Notis, Inc., Digital Equipment Corp., Data Research Associates, Inc. and other vendors to develop interoperable products.

The first wave of Z39.50 products, including one from the On-Line Computer Library Center, Inc., hit the market just last month.

"Z39.50, like many such standards, is defined in the Open Sys-

tems Interconnection model," said Clifford Lynch, director of library automation in the office of the president at the University of California. But because Transmission Control Protocol/Internet Protocol is used far more than OSI on the Internet, Z39.50 was adapted to run over TCP/IP for the Internet prototype, he said.

While specific search and indexing features of Gopher, WAIS and Z39.50 differ, all three technologies present users with a way to send out a query on a subject in order to find and retrieve information across a network. However, WAIS can be reached through Gopher, but Gopher cannot be reached through WAIS.

WAIS

WAIS, in fact, uses the 1988 version of Z39.50 as its starting point, but is not compatible with the 1992 version of that standard. WAIS allows users on different computer platforms to find and access all types of information, including text, image or stored digital voice.

The client program can run on an end-user device or on a shared machine used as an access device, as is often the case on the Internet. The server does the indexing and retrieval of documents. All files or databases to be queried have to be indexed.

WAIS, Gopher and 1992 Z39.50 all eliminate the need to know the wide variety of commands to obtain files since the resource discovery tools can intu-

(continued on page 77)

Retrieval tools go on market

continued from page 29

itively start a File Transfer Protocol session, or other access means, on the user's command to retrieve the data.

Thinking Machines, which developed WAIS, offers a version that runs on its powerful parallel computer, the Connection Machine. But the company's decision to release WAIS as a public-domain "freeware" package has spawned versions of WAIS client software for about a dozen of the most widely used computer platforms.

Although use of WAIS has increased during its use on the Internet, it was always intended to be an integrated search system for corporate users, said Brewster Kahle, project leader on WAIS at Thinking Machines. Now its creators appear ready to make WAIS commercially available for a variety of platforms.

Kahle said he will launch a company called WAIS, Inc. in

Menlo Park, Calif., later this month in order to market commercial versions of WAIS. Although he declined to offer more details, he said the continued availability of freeware versions would help publicize WAIS and give users a chance to experiment with it. But he pointed out that companies want commercially available products with customer support.

Gopher

The University of Minnesota, which holds the copyright to Gopher, allows free use of its client/server software as long as the information on the server is made available free of charge on the Internet.



Mark McCahill

Public-domain versions of Gopher have been created for virtually every computer platform, ranging from personal computers to mainframes.

"Gopher is designed to be easy to write clients and servers for," said Mark McCahill, manager of distributed computing and the project leader on Gopher.

Once files and databases are

prepared with Gopher's inverted text-search software so that key words can be located, documents can be accessed from Gopher servers. Michigan State University started with a Sun Microsystems, Inc. computer as the Gopher server, and this week the university is adding an IBM RISC System/6000 Model 350.

Rick Wiggins, manager of the computer laboratory, said students and faculty use Gopher to search for anything from scientific data to library information and course schedules.

Internet use of Gopher has skyrocketed, according to Joel Cooper, assistant director of network services at University of Notre Dame, pointing to statistics from the National Science Foundation (NSF) that said there has been a 4,000-fold increase in Gopher traffic since last year.

And Gopher, too, is going commercial. According to McCahill, the university this month is releasing Gopher Plus, the next version. Added features will include a billing mechanism to

charge for database use, support for binary text file transfer and a security method based on private-key encryption.



Brewster Kahle

The issue of gateways between WAIS, Gopher and Z39.50 is a significant one to users. Last fall, the NSF funded a newly formed organization called the Clearinghouse for Networked Information and Retrieval to track development of the technologies.

As part of its work, the clearinghouse, based in Research Triangle Park, N.C., this month will release a public-domain version of Z39.50, which will be backward compatible with WAIS.

"It's not a one-solution world," said Jim Fulton, computer programmer with the clearinghouse. "The important point is to make sure they are interoperable."

In addition to WAIS, Gopher and Z39.50, the clearinghouse will also follow the development of other emerging Internet-fostered search methods, including Archie and Worldwide Web. **72**

Internet retrieval tools go on market

Gopher and WAIS to go commercial this month; other information retrieval products gaining ground.

By Ellen Messmer
Senior Correspondent

WASHINGTON, D.C. — Three types of search-and-retrieval software tools currently available free on the Internet are being readied as commercial products.

In just over a year, Thinking Machines Corp.'s Wide Area Information Server (WAIS) and the University of Minnesota's Gopher software have been loaded onto servers at nearly 1,000 sites on the Internet, giving users the means to locate and retrieve information through text-based queries.

But even as the developers of WAIS and Gopher mull over plans to set up commercial ventures this month, a number of other products based on a third information retrieval method are gaining ground.

The library community is rallying around the 1992 ANSI standard Z39.50, an application-layer protocol for computer-to-computer information retrieval. The University of California, Pennsylvania State University and other colleges have set up a Z39.50 test bed on the Internet with AT&T, Notis, Inc., Digital Equipment Corp., Data Research Associates, Inc. and other vendors to develop interoperable products.

The first wave of Z39.50 products, including one from the On-Line Computer Library Center, Inc., hit the market just last month.

"Z39.50, like many such standards, is defined in the Open Sys-

tems Interconnection model," said Clifford Lynch, director of library automation in the office of the president at the University of California. But because Transmission Control Protocol/Internet Protocol is used far more than OSI on the Internet, Z39.50 was adapted to run over TCP/IP for the Internet prototype, he said.

While specific search and indexing features of Gopher, WAIS and Z39.50 differ, all three technologies present users with a way to send out a query on a subject in order to find and retrieve information across a network. However, WAIS can be reached through Gopher, but Gopher cannot be reached through WAIS.

WAIS

WAIS, in fact, uses the 1988 version of Z39.50 as its starting point, but is not compatible with the 1992 version of that standard. WAIS allows users on different computer platforms to find and access all types of information, including text, image or stored digital voice.

The client program can run on an end-user device or on a shared machine used as an access device, as is often the case on the Internet. The server does the indexing and retrieval of documents. All files or databases to be queried have to be indexed.

WAIS, Gopher and 1992 Z39.50 all eliminate the need to know the wide variety of commands to obtain files since the resource discovery tools can intu-

(continued on page 77)

Retrieval tools go on market

continued from page 29

itively start a File Transfer Protocol session, or other access means, on the user's command to retrieve the data.

Thinking Machines, which developed WAIS, offers a version that runs on its powerful parallel computer, the Connection Machine. But the company's decision to release WAIS as a public-domain "freeware" package has spawned versions of WAIS client software for about a dozen of the most widely used computer platforms.

Although use of WAIS has increased during its use on the Internet, it was always intended to be an integrated search system for corporate users, said Brewster Kahle, project leader on WAIS at Thinking Machines. Now its creators appear ready to make WAIS commercially available for a variety of platforms.

Kahle said he will launch a company called WAIS, Inc. in

Menlo Park, Calif., later this month in order to market commercial versions of WAIS. Although he declined to offer more details, he said the continued availability of freeware versions would help publicize WAIS and give users a chance to experiment with it. But he pointed out that companies want commercially available products with customer support.

Gopher

The University of Minnesota, which holds the copyright to Gopher, allows free use of its client/server software as long as the information on the server is made available free of charge on the Internet.



Mark McCahill

Public-domain versions of Gopher have been created for virtually every computer platform, ranging from personal computers to mainframes.

"Gopher is designed to be easy to write clients and servers for," said Mark McCahill, manager of distributed computing and the project leader on Gopher.

Once files and databases are

prepared with Gopher's inverted text-search software so that key words can be located, documents can be accessed from Gopher servers. Michigan State University started with a Sun Microsystems, Inc. computer as the Gopher server, and this week the university is adding an IBM RISC System/6000 Model 350.

Rick Wiggins, manager of the computer laboratory, said students and faculty use Gopher to search for anything from scientific data to library information and course schedules.

Internet use of Gopher has skyrocketed, according to Joel Cooper, assistant director of network services at University of Notre Dame, pointing to statistics from the National Science Foundation (NSF) that said there has been a 4,000-fold increase in Gopher traffic since last year.

And Gopher, too, is going commercial. According to McCahill, the university this month is releasing Gopher Plus, the next version. Added features will include a billing mechanism to

charge for database use, support for binary text file transfer and a security method based on private-key encryption.

The issue of gateways between WAIS, Gopher and Z39.50 is a significant one to users. Last fall, the NSF funded a newly formed organization called the Clearinghouse for Networked Information and Retrieval to track development of the technologies.

As part of its work, the clearinghouse, based in Research Triangle Park, N.C., this month will release a public-domain version of Z39.50, which will be backward compatible with WAIS.

"It's not a one-solution world," said Jim Fulton, computer programmer with the clearinghouse. "The important point is to make sure they are interoperable."

In addition to WAIS, Gopher and Z39.50, the clearinghouse will also follow the development of other emerging Internet-fostered search methods, including Archie and Worldwide Web. **Z**



Brewster Kahle

Internet retrieval tools go on market

Gopher and WAIS to go commercial this month; other information retrieval products gaining ground.

By Ellen Messmer
Senior Correspondent

WASHINGTON, D.C. — Three types of search-and-retrieval software tools currently available free on the Internet are being readied as commercial products.

In just over a year, Thinking Machines Corp.'s Wide Area Information Server (WAIS) and the University of Minnesota's Gopher software have been loaded onto servers at nearly 1,000 sites on the Internet, giving users the means to locate and retrieve information through text-based queries.

But even as the developers of WAIS and Gopher mull over plans to set up commercial ventures this month, a number of other products based on a third information retrieval method are gaining ground.

The library community is rallying around the 1992 ANSI standard Z39.50, an application-layer protocol for computer-to-computer information retrieval. The University of California, Pennsylvania State University and other colleges have set up a Z39.50 test bed on the Internet with AT&T, Notis, Inc., Digital Equipment Corp., Data Research Associates, Inc. and other vendors to develop interoperable products.

The first wave of Z39.50 products, including one from the On-Line Computer Library Center, Inc., hit the market just last month.

"Z39.50, like many such standards, is defined in the Open Sys-

tems Interconnection model," said Clifford Lynch, director of library automation in the office of the president at the University of California. But because Transmission Control Protocol/Internet Protocol is used far more than OSI on the Internet, Z39.50 was adapted to run over TCP/IP for the Internet prototype, he said.

While specific search and indexing features of Gopher, WAIS and Z39.50 differ, all three technologies present users with a way to send out a query on a subject in order to find and retrieve information across a network. However, WAIS can be reached through Gopher, but Gopher cannot be reached through WAIS.

WAIS

WAIS, in fact, uses the 1988 version of Z39.50 as its starting point, but is not compatible with the 1992 version of that standard. WAIS allows users on different computer platforms to find and access all types of information, including text, image or stored digital voice.

The client program can run on an end-user device or on a shared machine used as an access device, as is often the case on the Internet. The server does the indexing and retrieval of documents. All files or databases to be queried have to be indexed.

WAIS, Gopher and 1992 Z39.50 all eliminate the need to know the wide variety of commands to obtain files since the resource discovery tools can intu-

(continued on page 77)

Retrieval tools go on market

continued from page 29

itively start a File Transfer Protocol session, or other access means, on the user's command to retrieve the data.

Thinking Machines, which developed WAIS, offers a version that runs on its powerful parallel computer, the Connection Machine. But the company's decision to release WAIS as a public-domain "freeware" package has spawned versions of WAIS client software for about a dozen of the most widely used computer platforms.

Although use of WAIS has increased during its use on the Internet, it was always intended to be an integrated search system for corporate users, said Brewster Kahle, project leader on WAIS at Thinking Machines. Now its creators appear ready to make WAIS commercially available for a variety of platforms.

Kahle said he will launch a company called WAIS, Inc. in

Menlo Park, Calif., later this month in order to market commercial versions of WAIS. Although he declined to offer more details, he said the continued availability of freeware versions would help publicize WAIS and give users a chance to experiment with it. But he pointed out that companies want commercially available products with customer support.

Gopher

The University of Minnesota, which holds the copyright to Gopher, allows free use of its client/server software as long as the in-

formation on the server is made available free of charge on the Internet.

Public-domain versions of Gopher have been created for virtually every computer platform, ranging from personal computers to mainframes.

"Gopher is designed to be easy to write clients and servers for," said Mark McCahill, manager of distributed computing and the project leader on Gopher.

Once files and databases are

prepared with Gopher's inverted text-search software so that key words can be located, documents can be accessed from Gopher servers. Michigan State University started with a Sun Microsystems, Inc. computer as the Gopher server, and this week the university is adding an IBM RISC System/6000 Model 350.

Rick Wiggins, manager of the computer laboratory, said students and faculty use Gopher to search for anything from scientific data to library information and course schedules.

Internet use of Gopher has skyrocketed, according to Joel Cooper, assistant director of network services at University of Notre Dame, pointing to statistics from the National Science Foundation (NSF) that said there has been a 4,000-fold increase in Gopher traffic since last year.

And Gopher, too, is going commercial. According to McCahill, the university this month is releasing Gopher Plus, the next version. Added features will include a billing mechanism to

charge for database use, support for binary text file transfer and a security method based on private-key encryption.

The issue of gateways between WAIS, Gopher and Z39.50 is a significant one to users. Last fall, the NSF funded a newly formed organization called the Clearinghouse for Networked Information and Retrieval to track development of the technologies.

As part of its work, the clearinghouse, based in Research Triangle Park, N.C., this month will release a public-domain version of Z39.50, which will be backward compatible with WAIS.

"It's not a one-solution world," said Jim Fulton, computer programmer with the clearinghouse. "The important point is to make sure they are interoperable."

In addition to WAIS, Gopher and Z39.50, the clearinghouse will also follow the development of other emerging Internet-fostered search methods, including Archie and Worldwide Web. **Z**



Brewster Kahle



Mark McCahill

Internet retrieval tools go on market

Gopher and WAIS to go commercial this month; other information retrieval products gaining ground.

By Ellen Messmer
Senior Correspondent

WASHINGTON, D.C. — Three types of search-and-retrieval software tools currently available free on the Internet are being readied as commercial products.

In just over a year, Thinking Machines Corp.'s Wide Area Information Server (WAIS) and the University of Minnesota's Gopher software have been loaded onto servers at nearly 1,000 sites on the Internet, giving users the means to locate and retrieve information through text-based queries.

But even as the developers of WAIS and Gopher mull over plans to set up commercial ventures this month, a number of other products based on a third information retrieval method are gaining ground.

The library community is rallying around the 1992 ANSI standard Z39.50, an application-layer protocol for computer-to-computer information retrieval. The University of California, Pennsylvania State University and other colleges have set up a Z39.50 test bed on the Internet with AT&T, Notis, Inc., Digital Equipment Corp., Data Research Associates, Inc. and other vendors to develop interoperable products.

The first wave of Z39.50 products, including one from the On-Line Computer Library Center, Inc., hit the market just last month.

"Z39.50, like many such standards, is defined in the Open Sys-

tems Interconnection model," said Clifford Lynch, director of library automation in the office of the president at the University of California. But because Transmission Control Protocol/Internet Protocol is used far more than OSI on the Internet, Z39.50 was adapted to run over TCP/IP for the Internet prototype, he said.

While specific search and indexing features of Gopher, WAIS and Z39.50 differ, all three technologies present users with a way to send out a query on a subject in order to find and retrieve information across a network. However, WAIS can be reached through Gopher, but Gopher cannot be reached through WAIS.

WAIS

WAIS, in fact, uses the 1988 version of Z39.50 as its starting point, but is not compatible with the 1992 version of that standard. WAIS allows users on different computer platforms to find and access all types of information, including text, image or stored digital voice.

The client program can run on an end-user device or on a shared machine used as an access device, as is often the case on the Internet. The server does the indexing and retrieval of documents. All files or databases to be queried have to be indexed.

WAIS, Gopher and 1992 Z39.50 all eliminate the need to know the wide variety of commands to obtain files since the resource discovery tools can intu-

(continued on page 77)

Retrieval tools go on market

continued from page 29

itively start a File Transfer Protocol session, or other access means, on the user's command to retrieve the data.

Thinking Machines, which developed WAIS, offers a version that runs on its powerful parallel computer, the Connection Machine. But the company's decision to release WAIS as a public-domain "freeware" package has spawned versions of WAIS client software for about a dozen of the most widely used computer platforms.

Although use of WAIS has increased during its use on the Internet, it was always intended to be an integrated search system for corporate users, said Brewster Kahle, project leader on WAIS at Thinking Machines. Now its creators appear ready to make WAIS commercially available for a variety of platforms.

Kahle said he will launch a company called WAIS, Inc. in

Menlo Park, Calif., later this month in order to market commercial versions of WAIS. Although he declined to offer more details, he said the continued availability of freeware versions would help publicize WAIS and give users a chance to experiment with it. But he pointed out that companies want commercially available products with customer support.

Gopher

The University of Minnesota, which holds the copyright to Gopher, allows free use of its client/server software as long as the information on the server is made available free of charge on the Internet.



Mark McCahill

Public-domain versions of Gopher have been created for virtually every computer platform, ranging from personal computers to mainframes.

"Gopher is designed to be easy to write clients and servers for," said Mark McCahill, manager of distributed computing and the project leader on Gopher.

Once files and databases are

prepared with Gopher's inverted text-search software so that key words can be located, documents can be accessed from Gopher servers. Michigan State University started with a Sun Microsystems, Inc. computer as the Gopher server, and this week the university is adding an IBM RISC System/6000 Model 350.

Rick Wiggins, manager of the computer laboratory, said students and faculty use Gopher to search for anything from scientific data to library information and course schedules.

Internet use of Gopher has skyrocketed, according to Joel Cooper, assistant director of network services at University of Notre Dame, pointing to statistics from the National Science Foundation (NSF) that said there has been a 4,000-fold increase in Gopher traffic since last year.

And Gopher, too, is going commercial. According to McCahill, the university this month is releasing Gopher Plus, the next version. Added features will include a billing mechanism to

charge for database use, support for binary text file transfer and a security method based on private-key encryption.

The issue of gateways between WAIS, Gopher and Z39.50 is a significant one to users. Last fall, the NSF funded a newly formed organization called the Clearinghouse for Networked Information and Retrieval to track development of the technologies.



Brewster Kahle

As part of its work, the clearinghouse, based in Research Triangle Park, N.C., this month will release a public-domain version of Z39.50, which will be backward compatible with WAIS.

"It's not a one-solution world," said Jim Fulton, computer programmer with the clearinghouse. "The important point is to make sure they are interoperable."

In addition to WAIS, Gopher and Z39.50, the clearinghouse will also follow the development of other emerging Internet-fostered search methods, including Archie and Worldwide Web. **■**

Internet retrieval tools go on market

Gopher and WAIS to go commercial this month; other information retrieval products gaining ground.

By Ellen Messmer
Senior Correspondent

WASHINGTON, D.C. — Three types of search-and-retrieval software tools currently available free on the Internet are being readied as commercial products.

In just over a year, Thinking Machines Corp.'s Wide Area Information Server (WAIS) and the University of Minnesota's Gopher software have been loaded onto servers at nearly 1,000 sites on the Internet, giving users the means to locate and retrieve information through text-based queries.

But even as the developers of WAIS and Gopher mull over plans to set up commercial ventures this month, a number of other products based on a third information retrieval method are gaining ground.

The library community is rallying around the 1992 ANSI standard Z39.50, an application-layer protocol for computer-to-computer information retrieval. The University of California, Pennsylvania State University and other colleges have set up a Z39.50 test bed on the Internet with AT&T, Notis, Inc., Digital Equipment Corp., Data Research Associates, Inc. and other vendors to develop interoperable products.

The first wave of Z39.50 products, including one from the On-Line Computer Library Center, Inc., hit the market just last month.

"Z39.50, like many such standards, is defined in the Open Sys-

tems Interconnection model," said Clifford Lynch, director of library automation in the office of the president at the University of California. But because Transmission Control Protocol/Internet Protocol is used far more than OSI on the Internet, Z39.50 was adapted to run over TCP/IP for the Internet prototype, he said.

While specific search and indexing features of Gopher, WAIS and Z39.50 differ, all three technologies present users with a way to send out a query on a subject in order to find and retrieve information across a network. However, WAIS can be reached through Gopher, but Gopher cannot be reached through WAIS.

WAIS

WAIS, in fact, uses the 1988 version of Z39.50 as its starting point, but is not compatible with the 1992 version of that standard. WAIS allows users on different computer platforms to find and access all types of information, including text, image or stored digital voice.

The client program can run on an end-user device or on a shared machine used as an access device, as is often the case on the Internet. The server does the indexing and retrieval of documents. All files or databases to be queried have to be indexed.

WAIS, Gopher and 1992 Z39.50 all eliminate the need to know the wide variety of commands to obtain files since the resource discovery tools can intu-

(continued on page 77)

Retrieval tools go on market

continued from page 29

itively start a File Transfer Protocol session, or other access means, on the user's command to retrieve the data.

Thinking Machines, which developed WAIS, offers a version that runs on its powerful parallel computer, the Connection Machine. But the company's decision to release WAIS as a public-domain "freeware" package has spawned versions of WAIS client software for about a dozen of the most widely used computer platforms.

Although use of WAIS has increased during its use on the Internet, it was always intended to be an integrated search system for corporate users, said Brewster Kahle, project leader on WAIS at Thinking Machines. Now its creators appear ready to make WAIS commercially available for a variety of platforms.

Kahle said he will launch a company called WAIS, Inc. in

Menlo Park, Calif., later this month in order to market commercial versions of WAIS. Although he declined to offer more details, he said the continued availability of freeware versions would help publicize WAIS and give users a chance to experiment with it. But he pointed out that companies want commercially available products with customer support.

Gopher

The University of Minnesota, which holds the copyright to Gopher, allows free use of its client/server software as long as the information on the server is made available free of charge on the Internet.



Mark McCahill

Public-domain versions of Gopher have been created for virtually every computer platform, ranging from personal computers to mainframes.

"Gopher is designed to be easy to write clients and servers for," said Mark McCahill, manager of distributed computing and the project leader on Gopher.

Once files and databases are

prepared with Gopher's inverted text-search software so that key words can be located, documents can be accessed from Gopher servers. Michigan State University started with a Sun Microsystems, Inc. computer as the Gopher server, and this week the university is adding an IBM RISC System/6000 Model 350.

Rick Wiggins, manager of the computer laboratory, said students and faculty use Gopher to search for anything from scientific data to library information and course schedules.

Internet use of Gopher has skyrocketed, according to Joel Cooper, assistant director of network services at University of Notre Dame, pointing to statistics from the National Science Foundation (NSF) that said there has been a 4,000-fold increase in Gopher traffic since last year.

And Gopher, too, is going commercial. According to McCahill, the university this month is releasing Gopher Plus, the next version. Added features will include a billing mechanism to

charge for database use, support for binary text file transfer and a security method based on private-key encryption.

The issue of gateways between



Brewster Kahle

WAIS, Gopher and Z39.50 is a significant one to users. Last fall, the NSF funded a newly formed organization called the Clearinghouse for Networked Information and Retrieval to track development of the technologies.

As part of its work, the clearinghouse, based in Research Triangle Park, N.C., this month will release a public-domain version of Z39.50, which will be backward compatible with WAIS.

"It's not a one-solution world," said Jim Fulton, computer programmer with the clearinghouse. "The important point is to make sure they are interoperable."

In addition to WAIS, Gopher and Z39.50, the clearinghouse will also follow the development of other emerging Internet-fostered search methods, including Archie and Worldwide Web. **■**

Internet retrieval tools go on market

Gopher and WAIS to go commercial this month; other information retrieval products gaining ground.

By Ellen Messmer
Senior Correspondent

WASHINGTON, D.C. — Three types of search-and-retrieval software tools currently available free on the Internet are being readied as commercial products.

In just over a year, Thinking Machines Corp.'s Wide Area Information Server (WAIS) and the University of Minnesota's Gopher software have been loaded onto servers at nearly 1,000 sites on the Internet, giving users the means to locate and retrieve information through text-based queries.

But even as the developers of WAIS and Gopher mull over plans to set up commercial ventures this month, a number of other products based on a third information retrieval method are gaining ground.

The library community is rallying around the 1992 ANSI standard Z39.50, an application-layer protocol for computer-to-computer information retrieval. The University of California, Pennsylvania State University and other colleges have set up a Z39.50 test bed on the Internet with AT&T, Notis, Inc., Digital Equipment Corp., Data Research Associates, Inc. and other vendors to develop interoperable products.

The first wave of Z39.50 products, including one from the On-Line Computer Library Center, Inc., hit the market just last month.

"Z39.50, like many such standards, is defined in the Open Sys-

tems Interconnection model," said Clifford Lynch, director of library automation in the office of the president at the University of California. But because Transmission Control Protocol/Internet Protocol is used far more than OSI on the Internet, Z39.50 was adapted to run over TCP/IP for the Internet prototype, he said.

While specific search and indexing features of Gopher, WAIS and Z39.50 differ, all three technologies present users with a way to send out a query on a subject in order to find and retrieve information across a network. However, WAIS can be reached through Gopher, but Gopher cannot be reached through WAIS.

WAIS

WAIS, in fact, uses the 1988 version of Z39.50 as its starting point, but is not compatible with the 1992 version of that standard. WAIS allows users on different computer platforms to find and access all types of information, including text, image or stored digital voice.

The client program can run on an end-user device or on a shared machine used as an access device, as is often the case on the Internet. The server does the indexing and retrieval of documents. All files or databases to be queried have to be indexed.

WAIS, Gopher and 1992 Z39.50 all eliminate the need to know the wide variety of commands to obtain files since the resource discovery tools can intu-

(continued on page 77)

Retrieval tools go on market

continued from page 29

itively start a File Transfer Protocol session, or other access means, on the user's command to retrieve the data.

Thinking Machines, which developed WAIS, offers a version that runs on its powerful parallel computer, the Connection Machine. But the company's decision to release WAIS as a public-domain "freeware" package has spawned versions of WAIS client software for about a dozen of the most widely used computer platforms.

Although use of WAIS has increased during its use on the Internet, it was always intended to be an integrated search system for corporate users, said Brewster Kahle, project leader on WAIS at Thinking Machines. Now its creators appear ready to make WAIS commercially available for a variety of platforms.

Kahle said he will launch a company called WAIS, Inc. in

Menlo Park, Calif., later this month in order to market commercial versions of WAIS. Although he declined to offer more details, he said the continued availability of freeware versions would help publicize WAIS and give users a chance to experiment with it. But he pointed out that companies want commercially available products with customer support.

Gopher

The University of Minnesota, which holds the copyright to Gopher, allows free use of its client/server software as long as the information on the server is made available free of charge on the Internet.



Mark McCahill

Public-domain versions of Gopher have been created for virtually every computer platform, ranging from personal computers to mainframes.

"Gopher is designed to be easy to write clients and servers for," said Mark McCahill, manager of distributed computing and the project leader on Gopher.

Once files and databases are

prepared with Gopher's inverted text-search software so that key words can be located, documents can be accessed from Gopher servers. Michigan State University started with a Sun Microsystems, Inc. computer as the Gopher server, and this week the university is adding an IBM RISC System/6000 Model 350.

Rick Wiggins, manager of the computer laboratory, said students and faculty use Gopher to search for anything from scientific data to library information and course schedules.

Internet use of Gopher has skyrocketed, according to Joel Cooper, assistant director of network services at University of Notre Dame, pointing to statistics from the National Science Foundation (NSF) that said there has been a 4,000-fold increase in Gopher traffic since last year.

And Gopher, too, is going commercial. According to McCahill, the university this month is releasing Gopher Plus, the next version. Added features will include a billing mechanism to

charge for database use, support for binary text file transfer and a security method based on private-key encryption.

The issue of gateways between WAIS, Gopher and Z39.50 is a significant one to users. Last fall, the NSF funded a newly formed organization called the Clearinghouse for Networked Information and Retrieval to track development of the technologies.

As part of its work, the clearinghouse, based in Research Triangle Park, N.C., this month will release a public-domain version of Z39.50, which will be backward compatible with WAIS.

"It's not a one-solution world," said Jim Fulton, computer programmer with the clearinghouse. "The important point is to make sure they are interoperable."

In addition to WAIS, Gopher and Z39.50, the clearinghouse will also follow the development of other emerging Internet-fostered search methods, including Archie and Worldwide Web. **Z**



Brewster Kahle

Internet retrieval tools go on market

Gopher and WAIS to go commercial this month; other information retrieval products gaining ground.

By Ellen Messmer
Senior Correspondent

WASHINGTON, D.C. — Three types of search-and-retrieval software tools currently available free on the Internet are being readied as commercial products.

In just over a year, Thinking Machines Corp.'s Wide Area Information Server (WAIS) and the University of Minnesota's Gopher software have been loaded onto servers at nearly 1,000 sites on the Internet, giving users the means to locate and retrieve information through text-based queries.

But even as the developers of WAIS and Gopher mull over plans to set up commercial ventures this month, a number of other products based on a third information retrieval method are gaining ground.

The library community is rallying around the 1992 ANSI standard Z39.50, an application-layer protocol for computer-to-computer information retrieval. The University of California, Pennsylvania State University and other colleges have set up a Z39.50 test bed on the Internet with AT&T, Notis, Inc., Digital Equipment Corp., Data Research Associates, Inc. and other vendors to develop interoperable products.

The first wave of Z39.50 products, including one from the On-Line Computer Library Center, Inc., hit the market just last month.

"Z39.50, like many such standards, is defined in the Open Sys-

tems Interconnection model," said Clifford Lynch, director of library automation in the office of the president at the University of California. But because Transmission Control Protocol/Internet Protocol is used far more than OSI on the Internet, Z39.50 was adapted to run over TCP/IP for the Internet prototype, he said.

While specific search and indexing features of Gopher, WAIS and Z39.50 differ, all three technologies present users with a way to send out a query on a subject in order to find and retrieve information across a network. However, WAIS can be reached through Gopher, but Gopher cannot be reached through WAIS.

WAIS

WAIS, in fact, uses the 1988 version of Z39.50 as its starting point, but is not compatible with the 1992 version of that standard. WAIS allows users on different computer platforms to find and access all types of information, including text, image or stored digital voice.

The client program can run on an end-user device or on a shared machine used as an access device, as is often the case on the Internet. The server does the indexing and retrieval of documents. All files or databases to be queried have to be indexed.

WAIS, Gopher and 1992 Z39.50 all eliminate the need to know the wide variety of commands to obtain files since the resource discovery tools can intu-

(continued on page 77)

Retrieval tools go on market

continued from page 29

itively start a File Transfer Protocol session, or other access means, on the user's command to retrieve the data.

Thinking Machines, which developed WAIS, offers a version that runs on its powerful parallel computer, the Connection Machine. But the company's decision to release WAIS as a public-domain "freeware" package has spawned versions of WAIS client software for about a dozen of the most widely used computer platforms.

Although use of WAIS has increased during its use on the Internet, it was always intended to be an integrated search system for corporate users, said Brewster Kahle, project leader on WAIS at Thinking Machines. Now its creators appear ready to make WAIS commercially available for a variety of platforms.

Kahle said he will launch a company called WAIS, Inc. in

Menlo Park, Calif., later this month in order to market commercial versions of WAIS. Although he declined to offer more details, he said the continued availability of freeware versions would help publicize WAIS and give users a chance to experiment with it. But he pointed out that companies want commercially available products with customer support.

Gopher

The University of Minnesota, which holds the copyright to Gopher, allows free use of its client/server software as long as the information on the server is made available free of charge on the Internet.



Mark McCahill

Public-domain versions of Gopher have been created for virtually every computer platform, ranging from personal computers to mainframes.

"Gopher is designed to be easy to write clients and servers for," said Mark McCahill, manager of distributed computing and the project leader on Gopher.

Once files and databases are

prepared with Gopher's inverted text-search software so that key words can be located, documents can be accessed from Gopher servers. Michigan State University started with a Sun Microsystems, Inc. computer as the Gopher server, and this week the university is adding an IBM RISC System/6000 Model 350.

Rick Wiggins, manager of the computer laboratory, said students and faculty use Gopher to search for anything from scientific data to library information and course schedules.

Internet use of Gopher has skyrocketed, according to Joel Cooper, assistant director of network services at University of Notre Dame, pointing to statistics from the National Science Foundation (NSF) that said there has been a 4,000-fold increase in Gopher traffic since last year.

And Gopher, too, is going commercial. According to McCahill, the university this month is releasing Gopher Plus, the next version. Added features will include a billing mechanism to

charge for database use, support for binary text file transfer and a security method based on private-key encryption.

The issue of gateways between WAIS, Gopher and Z39.50 is a significant one to users. Last fall, the NSF funded a newly formed organization called the Clearinghouse for Networked Information and Retrieval to track development of the technologies.

As part of its work, the clearinghouse, based in Research Triangle Park, N.C., this month will release a public-domain version of Z39.50, which will be backward compatible with WAIS.

"It's not a one-solution world," said Jim Fulton, computer programmer with the clearinghouse. "The important point is to make sure they are interoperable."

In addition to WAIS, Gopher and Z39.50, the clearinghouse will also follow the development of other emerging Internet-fostered search methods, including Archie and Worldwide Web. **Z**



Brewster Kahle

Internet retrieval tools go on market

Gopher and WAIS to go commercial this month; other information retrieval products gaining ground.

By Ellen Messmer
Senior Correspondent

WASHINGTON, D.C. — Three types of search-and-retrieval software tools currently available free on the Internet are being readied as commercial products.

In just over a year, Thinking Machines Corp.'s Wide Area Information Server (WAIS) and the University of Minnesota's Gopher software have been loaded onto servers at nearly 1,000 sites on the Internet, giving users the means to locate and retrieve information through text-based queries.

But even as the developers of WAIS and Gopher mull over plans to set up commercial ventures this month, a number of other products based on a third information retrieval method are gaining ground.

The library community is rallying around the 1992 ANSI standard Z39.50, an application-layer protocol for computer-to-computer information retrieval. The University of California, Pennsylvania State University and other colleges have set up a Z39.50 test bed on the Internet with AT&T, Notis, Inc., Digital Equipment Corp., Data Research Associates, Inc. and other vendors to develop interoperable products.

The first wave of Z39.50 products, including one from the On-Line Computer Library Center, Inc., hit the market just last month.

"Z39.50, like many such standards, is defined in the Open Sys-

tems Interconnection model," said Clifford Lynch, director of library automation in the office of the president at the University of California. But because Transmission Control Protocol/Internet Protocol is used far more than OSI on the Internet, Z39.50 was adapted to run over TCP/IP for the Internet prototype, he said.

While specific search and indexing features of Gopher, WAIS and Z39.50 differ, all three technologies present users with a way to send out a query on a subject in order to find and retrieve information across a network. However, WAIS can be reached through Gopher, but Gopher cannot be reached through WAIS.

WAIS

WAIS, in fact, uses the 1988 version of Z39.50 as its starting point, but is not compatible with the 1992 version of that standard. WAIS allows users on different computer platforms to find and access all types of information, including text, image or stored digital voice.

The client program can run on an end-user device or on a shared machine used as an access device, as is often the case on the Internet. The server does the indexing and retrieval of documents. All files or databases to be queried have to be indexed.

WAIS, Gopher and 1992 Z39.50 all eliminate the need to know the wide variety of commands to obtain files since the resource discovery tools can intu-

(continued on page 77)

Retrieval tools go on market

continued from page 29

itively start a File Transfer Protocol session, or other access means, on the user's command to retrieve the data.

Thinking Machines, which developed WAIS, offers a version that runs on its powerful parallel computer, the Connection Machine. But the company's decision to release WAIS as a public-domain "freeware" package has spawned versions of WAIS client software for about a dozen of the most widely used computer platforms.

Although use of WAIS has increased during its use on the Internet, it was always intended to be an integrated search system for corporate users, said Brewster Kahle, project leader on WAIS at Thinking Machines. Now its creators appear ready to make WAIS commercially available for a variety of platforms.

Kahle said he will launch a company called WAIS, Inc. in

Menlo Park, Calif., later this month in order to market commercial versions of WAIS. Although he declined to offer more details, he said the continued availability of freeware versions would help publicize WAIS and give users a chance to experiment with it. But he pointed out that companies want commercially available products with customer support.

Gopher

The University of Minnesota, which holds the copyright to Gopher, allows free use of its client/server software as long as the information on the server is made available free of charge on the Internet.



Mark McCahill

Public-domain versions of Gopher have been created for virtually every computer platform, ranging from personal computers to mainframes. "Gopher is designed to be easy to write clients and servers for," said Mark McCahill, manager of distributed computing and the project leader on Gopher.

Once files and databases are

prepared with Gopher's inverted text-search software so that key words can be located, documents can be accessed from Gopher servers. Michigan State University started with a Sun Microsystems, Inc. computer as the Gopher server, and this week the university is adding an IBM RISC System/6000 Model 350.

Rick Wiggins, manager of the computer laboratory, said students and faculty use Gopher to search for anything from scientific data to library information and course schedules.

Internet use of Gopher has skyrocketed, according to Joel Cooper, assistant director of network services at University of Notre Dame, pointing to statistics from the National Science Foundation (NSF) that said there has been a 4,000-fold increase in Gopher traffic since last year.

And Gopher, too, is going commercial. According to McCahill, the university this month is releasing Gopher Plus, the next version. Added features will include a billing mechanism to

charge for database use, support for binary text file transfer and a security method based on private-key encryption.

The issue of gateways between WAIS, Gopher and Z39.50 is a significant one to users. Last fall, the NSF funded a newly formed organization called the Clearinghouse for Networked Information and Retrieval to track development of the technologies.



Brewster Kahle

As part of its work, the clearinghouse, based in Research Triangle Park, N.C., this month will release a public-domain version of Z39.50, which will be backward compatible with WAIS.

"It's not a one-solution world," said Jim Fulton, computer programmer with the clearinghouse. "The important point is to make sure they are interoperable."

In addition to WAIS, Gopher and Z39.50, the clearinghouse will also follow the development of other emerging Internet-fostered search methods, including Archie and Worldwide Web. **Z**

Internet retrieval tools go on market

Gopher and WAIS to go commercial this month; other information retrieval products gaining ground.

By Ellen Messmer
Senior Correspondent

WASHINGTON, D.C. — Three types of search-and-retrieval software tools currently available free on the Internet are being readied as commercial products.

In just over a year, Thinking Machines Corp.'s Wide Area Information Server (WAIS) and the University of Minnesota's Gopher software have been loaded onto servers at nearly 1,000 sites on the Internet, giving users the means to locate and retrieve information through text-based queries.

But even as the developers of WAIS and Gopher mull over plans to set up commercial ventures this month, a number of other products based on a third information retrieval method are gaining ground.

The library community is rallying around the 1992 ANSI standard Z39.50, an application-layer protocol for computer-to-computer information retrieval. The University of California, Pennsylvania State University and other colleges have set up a Z39.50 test bed on the Internet with AT&T, Notis, Inc., Digital Equipment Corp., Data Research Associates, Inc. and other vendors to develop interoperable products.

The first wave of Z39.50 products, including one from the On-Line Computer Library Center, Inc., hit the market just last month.

"Z39.50, like many such standards, is defined in the Open Sys-

tems Interconnection model," said Clifford Lynch, director of library automation in the office of the president at the University of California. But because Transmission Control Protocol/Internet Protocol is used far more than OSI on the Internet, Z39.50 was adapted to run over TCP/IP for the Internet prototype, he said.

While specific search and indexing features of Gopher, WAIS and Z39.50 differ, all three technologies present users with a way to send out a query on a subject in order to find and retrieve information across a network. However, WAIS can be reached through Gopher, but Gopher cannot be reached through WAIS.

WAIS

WAIS, in fact, uses the 1988 version of Z39.50 as its starting point, but is not compatible with the 1992 version of that standard. WAIS allows users on different computer platforms to find and access all types of information, including text, image or stored digital voice.

The client program can run on an end-user device or on a shared machine used as an access device, as is often the case on the Internet. The server does the indexing and retrieval of documents. All files or databases to be queried have to be indexed.

WAIS, Gopher and 1992 Z39.50 all eliminate the need to know the wide variety of commands to obtain files since the resource discovery tools can intu-

(continued on page 77)

Retrieval tools go on market

continued from page 29

itively start a File Transfer Protocol session, or other access means, on the user's command to retrieve the data.

Thinking Machines, which developed WAIS, offers a version that runs on its powerful parallel computer, the Connection Machine. But the company's decision to release WAIS as a public-domain "freeware" package has spawned versions of WAIS client software for about a dozen of the most widely used computer platforms.

Although use of WAIS has increased during its use on the Internet, it was always intended to be an integrated search system for corporate users, said Brewster Kahle, project leader on WAIS at Thinking Machines. Now its creators appear ready to make WAIS commercially available for a variety of platforms.

Kahle said he will launch a company called WAIS, Inc. in

Menlo Park, Calif., later this month in order to market commercial versions of WAIS. Although he declined to offer more details, he said the continued availability of freeware versions would help publicize WAIS and give users a chance to experiment with it. But he pointed out that companies want commercially available products with customer support.

Gopher

The University of Minnesota, which holds the copyright to Gopher, allows free use of its client/server software as long as the information on the server is made available free of charge on the Internet.



Mark McCahill

Public-domain versions of Gopher have been created for virtually every computer platform, ranging from personal computers to mainframes.

"Gopher is designed to be easy to write clients and servers for," said Mark McCahill, manager of distributed computing and the project leader on Gopher.

Once files and databases are

prepared with Gopher's inverted text-search software so that key words can be located, documents can be accessed from Gopher servers. Michigan State University started with a Sun Microsystems, Inc. computer as the Gopher server, and this week the university is adding an IBM RISC System/6000 Model 350.

Rick Wiggins, manager of the computer laboratory, said students and faculty use Gopher to search for anything from scientific data to library information and course schedules.

Internet use of Gopher has skyrocketed, according to Joel Cooper, assistant director of network services at University of Notre Dame, pointing to statistics from the National Science Foundation (NSF) that said there has been a 4,000-fold increase in Gopher traffic since last year.

And Gopher, too, is going commercial. According to McCahill, the university this month is releasing Gopher Plus, the next version. Added features will include a billing mechanism to

charge for database use, support for binary text file transfer and a security method based on private-key encryption.

The issue of gateways between WAIS, Gopher and Z39.50 is a significant one to users. Last fall, the NSF funded a newly formed organization called the Clearinghouse for Networked Information and Retrieval to track development of the technologies.

As part of its work, the clearinghouse, based in Research Triangle Park, N.C., this month will release a public-domain version of Z39.50, which will be backward compatible with WAIS.

"It's not a one-solution world," said Jim Fulton, computer programmer with the clearinghouse. "The important point is to make sure they are interoperable."

In addition to WAIS, Gopher and Z39.50, the clearinghouse will also follow the development of other emerging Internet-fostered search methods, including Archie and Worldwide Web. ■



Brewster Kahle

Internet retrieval tools go on market

Gopher and WAIS to go commercial this month; other information retrieval products gaining ground.

By Ellen Messmer
Senior Correspondent

WASHINGTON, D.C. — Three types of search-and-retrieval software tools currently available free on the Internet are being readied as commercial products.

In just over a year, Thinking Machines Corp.'s Wide Area Information Server (WAIS) and the University of Minnesota's Gopher software have been loaded onto servers at nearly 1,000 sites on the Internet, giving users the means to locate and retrieve information through text-based queries.

But even as the developers of WAIS and Gopher mull over plans to set up commercial ventures this month, a number of other products based on a third information retrieval method are gaining ground.

The library community is rallying around the 1992 ANSI standard Z39.50, an application-layer protocol for computer-to-computer information retrieval. The University of California, Pennsylvania State University and other colleges have set up a Z39.50 test bed on the Internet with AT&T, Notis, Inc., Digital Equipment Corp., Data Research Associates, Inc. and other vendors to develop interoperable products.

The first wave of Z39.50 products, including one from the On-Line Computer Library Center, Inc., hit the market just last month.

"Z39.50, like many such standards, is defined in the Open Sys-

tems Interconnection model," said Clifford Lynch, director of library automation in the office of the president at the University of California. But because Transmission Control Protocol/Internet Protocol is used far more than OSI on the Internet, Z39.50 was adapted to run over TCP/IP for the Internet prototype, he said.

While specific search and indexing features of Gopher, WAIS and Z39.50 differ, all three technologies present users with a way to send out a query on a subject in order to find and retrieve information across a network. However, WAIS can be reached through Gopher, but Gopher cannot be reached through WAIS.

WAIS

WAIS, in fact, uses the 1988 version of Z39.50 as its starting point, but is not compatible with the 1992 version of that standard. WAIS allows users on different computer platforms to find and access all types of information, including text, image or stored digital voice.

The client program can run on an end-user device or on a shared machine used as an access device, as is often the case on the Internet. The server does the indexing and retrieval of documents. All files or databases to be queried have to be indexed.

WAIS, Gopher and 1992 Z39.50 all eliminate the need to know the wide variety of commands to obtain files since the resource discovery tools can intu-

(continued on page 77)

Retrieval tools go on market

continued from page 29

itively start a File Transfer Protocol session, or other access means, on the user's command to retrieve the data.

Thinking Machines, which developed WAIS, offers a version that runs on its powerful parallel computer, the Connection Machine. But the company's decision to release WAIS as a public-domain "freeware" package has spawned versions of WAIS client software for about a dozen of the most widely used computer platforms.

Although use of WAIS has increased during its use on the Internet, it was always intended to be an integrated search system for corporate users, said Brewster Kahle, project leader on WAIS at Thinking Machines. Now its creators appear ready to make WAIS commercially available for a variety of platforms.

Kahle said he will launch a company called WAIS, Inc. in

Menlo Park, Calif., later this month in order to market commercial versions of WAIS. Although he declined to offer more details, he said the continued availability of freeware versions would help publicize WAIS and give users a chance to experiment with it. But he pointed out that companies want commercially available products with customer support.

Gopher

The University of Minnesota, which holds the copyright to Gopher, allows free use of its client/server software as long as the information on the server is made available free of charge on the Internet.



Mark McCahill

Public-domain versions of Gopher have been created for virtually every computer platform, ranging from personal computers to mainframes.

"Gopher is designed to be easy to write clients and servers for," said Mark McCahill, manager of distributed computing and the project leader on Gopher.

Once files and databases are

prepared with Gopher's inverted text-search software so that key words can be located, documents can be accessed from Gopher servers. Michigan State University started with a Sun Microsystems, Inc. computer as the Gopher server, and this week the university is adding an IBM RISC System/6000 Model 350.

Rick Wiggins, manager of the computer laboratory, said students and faculty use Gopher to search for anything from scientific data to library information and course schedules.

Internet use of Gopher has skyrocketed, according to Joel Cooper, assistant director of network services at University of Notre Dame, pointing to statistics from the National Science Foundation (NSF) that said there has been a 4,000-fold increase in Gopher traffic since last year.

And Gopher, too, is going commercial. According to McCahill, the university this month is releasing Gopher Plus, the next version. Added features will include a billing mechanism to

charge for database use, support for binary text file transfer and a security method based on private-key encryption.

The issue of gateways between



Brewster Kahle

WAIS, Gopher and Z39.50 is a significant one to users. Last fall, the NSF funded a newly formed organization called the Clearinghouse for Networked Information and Retrieval to track development of the technologies.

As part of its work, the clearinghouse, based in Research Triangle Park, N.C., this month will release a public-domain version of Z39.50, which will be backward compatible with WAIS.

"It's not a one-solution world," said Jim Fulton, computer programmer with the clearinghouse. "The important point is to make sure they are interoperable."

In addition to WAIS, Gopher and Z39.50, the clearinghouse will also follow the development of other emerging Internet-fostered search methods, including Archie and Worldwide Web. **Z**

Internet retrieval tools go on market

Gopher and WAIS to go commercial this month; other information retrieval products gaining ground.

By Ellen Messmer
Senior Correspondent

WASHINGTON, D.C. — Three types of search-and-retrieval software tools currently available free on the Internet are being readied as commercial products.

In just over a year, Thinking Machines Corp.'s Wide Area Information Server (WAIS) and the University of Minnesota's Gopher software have been loaded onto servers at nearly 1,000 sites on the Internet, giving users the means to locate and retrieve information through text-based queries.

But even as the developers of WAIS and Gopher mull over plans to set up commercial ventures this month, a number of other products based on a third information retrieval method are gaining ground.

The library community is rallying around the 1992 ANSI standard Z39.50, an application-layer protocol for computer-to-computer information retrieval. The University of California, Pennsylvania State University and other colleges have set up a Z39.50 test bed on the Internet with AT&T, Notis, Inc., Digital Equipment Corp., Data Research Associates, Inc. and other vendors to develop interoperable products.

The first wave of Z39.50 products, including one from the On-Line Computer Library Center, Inc., hit the market just last month.

"Z39.50, like many such standards, is defined in the Open Sys-

tems Interconnection model," said Clifford Lynch, director of library automation in the office of the president at the University of California. But because Transmission Control Protocol/Internet Protocol is used far more than OSI on the Internet, Z39.50 was adapted to run over TCP/IP for the Internet prototype, he said.

While specific search and indexing features of Gopher, WAIS and Z39.50 differ, all three technologies present users with a way to send out a query on a subject in order to find and retrieve information across a network. However, WAIS can be reached through Gopher, but Gopher cannot be reached through WAIS.

WAIS

WAIS, in fact, uses the 1988 version of Z39.50 as its starting point, but is not compatible with the 1992 version of that standard. WAIS allows users on different computer platforms to find and access all types of information, including text, image or stored digital voice.

The client program can run on an end-user device or on a shared machine used as an access device, as is often the case on the Internet. The server does the indexing and retrieval of documents. All files or databases to be queried have to be indexed.

WAIS, Gopher and 1992 Z39.50 all eliminate the need to know the wide variety of commands to obtain files since the resource discovery tools can intuitively find them.
(continued on page 77)

Retrieval tools go on market

continued from page 29

itively start a File Transfer Protocol session, or other access means, on the user's command to retrieve the data.

Thinking Machines, which developed WAIS, offers a version that runs on its powerful parallel computer, the Connection Machine. But the company's decision to release WAIS as a public-domain "freeware" package has spawned versions of WAIS client software for about a dozen of the most widely used computer platforms.

Although use of WAIS has increased during its use on the Internet, it was always intended to be an integrated search system for corporate users, said Brewster Kahle, project leader on WAIS at Thinking Machines. Now its creators appear ready to make WAIS commercially available for a variety of platforms.

Kahle said he will launch a company called WAIS, Inc. in

Menlo Park, Calif., later this month in order to market commercial versions of WAIS. Although he declined to offer more details, he said the continued availability of freeware versions would help publicize WAIS and give users a chance to experiment with it. But he pointed out that companies want commercially available products with customer support.

Gopher

The University of Minnesota, which holds the copyright to Gopher, allows free use of its client/server software as long as the information on the server is made available free of charge on the Internet.

Public-domain versions of Gopher have been created for virtually every computer platform, ranging from personal computers to mainframes.

"Gopher is designed to be easy to write clients and servers for," said Mark McCahill, manager of distributed computing and the project leader on Gopher.

Once files and databases are

prepared with Gopher's inverted text-search software so that key words can be located, documents can be accessed from Gopher servers. Michigan State University started with a Sun Microsystems, Inc. computer as the Gopher server, and this week the university is adding an IBM RISC System/6000 Model 350.

Rick Wiggins, manager of the computer laboratory, said students and faculty use Gopher to search for anything from scientific data to library information and course schedules.

Internet use of Gopher has skyrocketed, according to Joel Cooper, assistant director of network services at University of Notre Dame, pointing to statistics from the National Science Foundation (NSF) that said there has been a 4,000-fold increase in Gopher traffic since last year.

And Gopher, too, is going commercial. According to McCahill, the university this month is releasing Gopher Plus, the next version. Added features will include a billing mechanism to

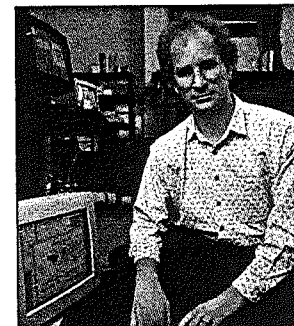
charge for database use, support for binary text file transfer and a security method based on private-key encryption.

The issue of gateways between WAIS, Gopher and Z39.50 is a significant one to users. Last fall, the NSF funded a newly formed organization called the Clearinghouse for Networked Information and Retrieval to track development of the technologies.

As part of its work, the clearinghouse, based in Research Triangle Park, N.C., this month will release a public-domain version of Z39.50, which will be backward compatible with WAIS.

"It's not a one-solution world," said Jim Fulton, computer programmer with the clearinghouse. "The important point is to make sure they are interoperable."

In addition to WAIS, Gopher and Z39.50, the clearinghouse will also follow the development of other emerging Internet-fostered search methods, including Archie and Worldwide Web. **Z**



Brewster Kahle



Mark McCahill